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⑭考案の名称　使い捨てオムツ

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㊧実用新案登録請求の範囲

(1) 吸収性コアと、該コアの少なくとも上面を覆う透液性トップシートと、該コアの少なくとも下面を覆う不透液性バックシートと、該コアの横対向側縁から外側へ延出するサイドフラップと、該サイドフラップ中に伸縮ギャザーをつくる弾性部材と、オムツの背側区域の横対向側に固定されたテープファスナーとを含む使い捨てオムツであつて、

前記各サイドフラップの縦方向前端部は、少なくともその一部が内側へ折り曲げられた状態で、オムツの前側区域に固定され、その折り曲げによつてオムツの前側区域から股下区域へかけてそれら区域の対向側にポケットが形成され、かつ、前記各サイドフラップの縦方向後端部は、外側へ広げられた状態で、オムツの背側区域における前記コアの横対向側縁から外側へ延出する耳部上に固定されている

ことを特徴とする前記オムツ。

(2) 前記サイドフラップは、その縦方向前端部が前記コア上に位置する前記トップシート上へ折り曲げられているとともに、さらに外側へ折り返えされた状態で、固定されている実用新案登録請求の範囲第1項記載のオムツ。

(3) 前記サイドフラップは、前記トップシートおよび前記バックシートとは別体に形成され、かつ、前記トップシートおよび前記バックシートの少なくとも一方の横側縁に接合されている実用新案登録請求の範囲第1項記載のオムツ。

(4) 前記サイドフラップは、通気防液性シートからなる実用新案登録請求の範囲第3項記載のオムツ。

(5) 前記サイドフラップは、耐水圧値が少なくとも200㎜である実用新案登録請求の範囲第3項記載のオムツ。

(6) 前記サイドフラップは、その横内側縁が前記バックシートと前記コアとの間に介在固定されている実用新案登録請求の範囲第3項記載のオムツ。

(7) 前記耳部は、前記トップシートおよび前記バックシートとは別体に形成され、かつ、前記コアの横側縁に位置する前記トップシートおよび前記バックシートの少なくとも何れかに接合されている実用新案登録請求の範囲第1項記載のオムツ。

(8) 前記耳部は、弾性伸縮性を有する実用新案登録請求の範囲第7項記載のオムツ。

(9) 前記耳部は、少なくとも横方向伸長性を有する不織布と伸縮性プラスチックフイルムとのラミネートシートからなる実用新案登録請求の範囲第8項記載のオムツ。

(10) 前記耳部は、その横内側縁が前記バックシートと前記コアとの間に介在固定されている実用新案登録請求の範囲第7項記載のオムツ。

(11) 前側区域における前記バックシート部分は、前記コアの下面全体を覆うシートと、その外面

に一体に接合された補強シートとからなる実用新案登録請求の範囲第1項記載のオムツ。

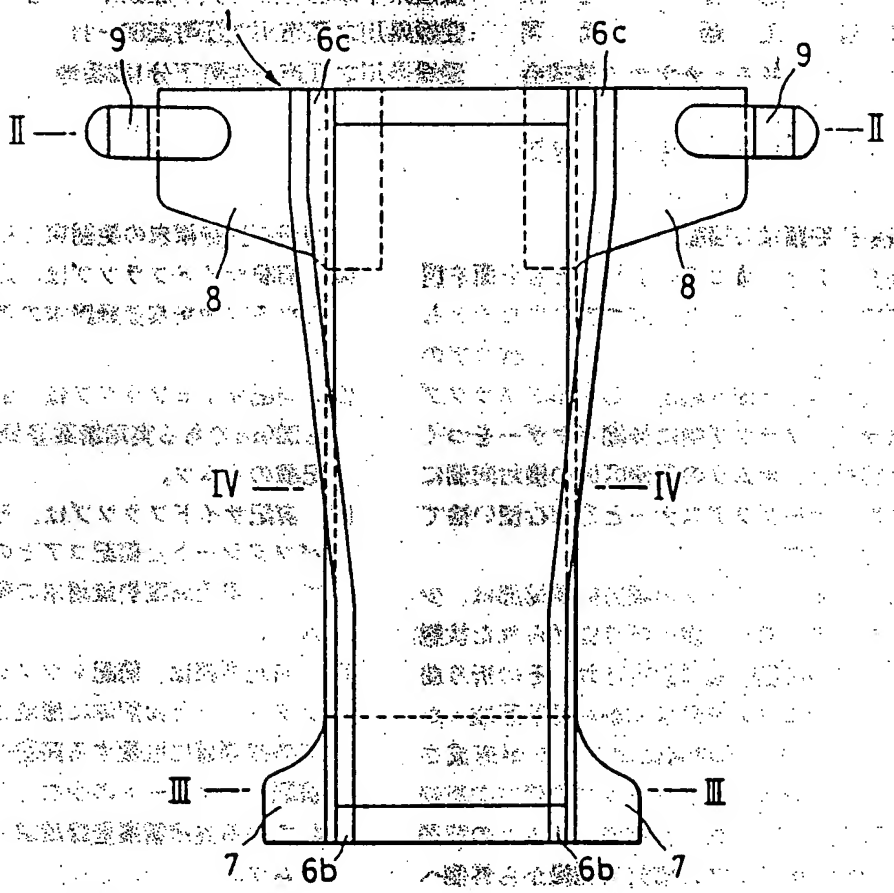
(2) 前記補強シートは、前記コアの対向側縁から外側へ延出して耳部を形成している実用新案登録請求の範囲第1項記載のオムツ。

図面の簡単な説明

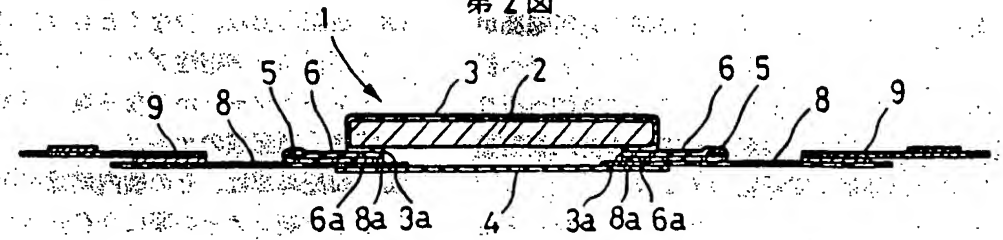
図面は本考案オムツの実施例を示すもので、第1図は展開平面図、第2図は第1図のII－II線断面図、第3図は第1図のIII－III断面図、第4図は第1図のIV－IV断面図、第5図はサイドフラップの縦方向後端部に切欠部またはタックが設けられた例の部分平面図である。

1：オムツ、2：コア、3：トップシート、4：バックシート、5：弾性部材、6：サイドフラップ、7：補強シート、8，9：耳部、10：ポケット、11：補強シート。

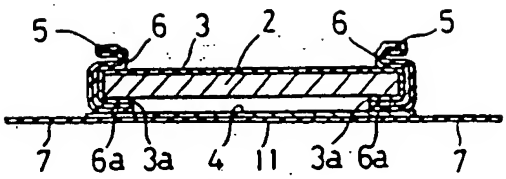
第1図



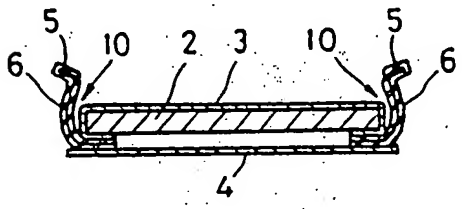
第2図



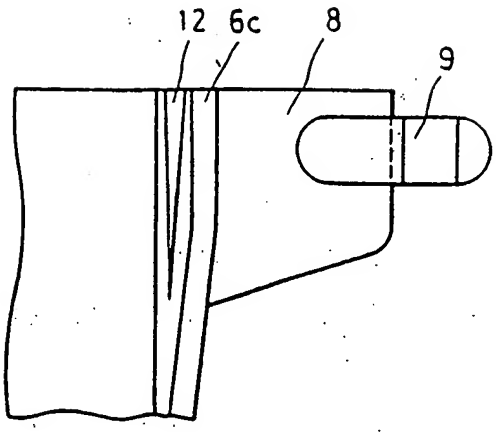
第3図



第4図



第5図



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DISPOSABLE DIAPER

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Claims

1. A disposable diaper, consisting of an absorbable core, a liquid-permeable front sheet covering at least the front surface of the core, liquid-impermeable back sheet covering at least the rear surface of the core, side flaps extended out from facing side edges of the core, an elastic part material forming an elastic and gathered area at the side flaps, and tape fasteners fixed to the facing sides of back area of the diaper, and characterized by containing a vertical front edge of each of the above-mentioned side flaps which is at least partially bent forward and fixed to the front side area of the diaper; containing pockets formed in facing sides from the front side area through the leg parts of the diaper by bending; and containing a vertical back edge of each of the above-mentioned side flaps extended out and fixed to ears that are extended out from the facing side edges of the above-mentioned core of the back of the diaper.

2. The diaper described in Claim 1 and containing the above-mentioned side flaps whose vertical front edges are bent over to the above-mentioned front sheet positioned on the above-mentioned core, then bent backward.

3. The diaper described in Claim 1 and containing the above-mentioned side flaps separately formed from either the above-mentioned front or back sheet, and fixed to at least one side edge of the above-mentioned front sheet and back sheet.

4. The diaper described in Claim 3 and containing the above-mentioned side flaps which is made with an air-permeable and liquid-impermeable sheet.

5. The diaper described in Claim 3 and containing the above-mentioned side flaps having a hydraulic resistance of 200 mm.

6. The diaper described in Claim 3 and containing the above-mentioned side flaps whose inner side edges are fixed between the above-mentioned back sheet and the above-mentioned core.

7. The diaper described in Claim 1 and containing the above-mentioned ears which are separately formed from either the above-mentioned top or back sheet, and fixed to at least either the above-mentioned front sheet positioned in a side edge of the above-mentioned core or the above-mentioned back sheet.

8. The diaper described in Claim 7 and containing the above-mentioned ears which has both flexibility and elasticity;

9. The diaper described in Claim 8 and containing the above-mentioned ears which are made with laminated sheets of nonwoven fabrics having at least horizontal extendibility and elastic plastic films.

10. The diaper described in Claim 7 and containing the above-mentioned ears whose side inner edges are fixed between the above-mentioned back sheets and the above-mentioned cores.

11. The diaper described in Claim 1 and containing in the front area the above-mentioned back sheet consisting of a sheet covering the entire bottom surface of the above-mentioned core and a reinforcing sheet entirely fixed to the outer surface.

12. The diaper described in Claim 11 and containing the above-mentioned reinforcing sheet which is extended out from both side edges of the above-mentioned core to form ears.

Detailed explanation of the utility model

Objective

Industrial application

The present utility model is concerned with a disposable diaper. In detail, the present utility model is concerned with the diaper containing elastic part materials diagonally arranged as leg bands to improve the fitting property with the body.

Prior art

1) The following technology, i.e., arranging elastic part materials on side flaps that are extended out from both side edges of an absorbable body, with a specific distance, was described in Japanese Kokoku Patent No. Sho 52[1977]-40267 concerning a disposable diaper. 2) The following technology, i.e., arranging elastic part materials on the free edges of side flaps, bending the side flaps backward over an absorbing body, then vertically fixing the edges to both a front area and a back

area to form pockets in leg parts where secretions can be introduced, is described in Japanese Kokai Patent Application No. Sho 59[1984]-25741 concerning a disposable diaper. 3) The following technology, i.e., diagonally arranging elastic part materials on side flaps to improve the fitting property with the body is described in Japanese Kokai Patent Application No. Sho 56[1981]-101901 concerning disposable diapers.

Problems to be solved by the utility model

In the case of the technology described in the above-mentioned 1), as elastic part materials with side flaps that were extended out were pressed and adhered around the legs when it was worn, comparatively good sealing property against the legs could be obtained. However, when the side flaps were fully extended, they could not catch up with the movement of the legs, resulting in leakage of urine.

In the case of the technology described in the above-mentioned 2), as the inner edges of side flaps that were bent forward and closed and in which elastic part materials were positioned when it was worn were pressed and adhered to the leg joints, and as pockets were formed in the leg areas, it was effective for leakage of urine. However, because it was desired for the distance between inner edges of both side flaps to be equal to the width of an absorbable body in the leg area, and because the short distance provided a small surface for wrapping a body, it was difficult to obtain both elasticity around the legs and the fitting property around the legs, especially in the back area.

In the case of the technology described in the above-mentioned 3), as elastic part materials were arranged to be extended from the front areas to the back areas of the side flaps, the side flaps had good fitting property when it [the diaper] was worn. However, as the side flaps where a significant width was restricted by the elastic part materials were narrow between the front areas and the leg areas, leakage of liquid stool or urine could not be prevented efficiently when a comparatively large amount of liquid stool or urine was discharged at once. In the diaper production, elastic materials, arranged diagonally to the direction of movement of the component materials, would complicate the mechanism and also cause more problems.

The purpose of the present utility model, is to efficiently solve the above-mentioned problems of the conventional technology, and to provide a disposable diaper able to wrap the entire back area of a body, and having pockets that receive secretions in the leg area.

(2) Constitution

Means to solve the problems

A diaper of the present utility model consists of an absorbable core, a liquid-permeable front sheet covering at least the top surface of the core, liquid-impermeable back sheet covering at least the rear surface of the core, side flaps extended out from facing side edges of the core, an elastic part material forming an elastic and gathered area in the side flaps,

and tape fasteners fixed to the facing sides of the back area of the diaper.

A front edge in the vertical direction of each of the above-mentioned side flaps is at least partially bent forward and fixed to the front area of the diaper.

Pockets are formed from the front area to the back area of both sides of the diaper by bending as mentioned previously.

The back edge in the vertical direction of each of the above-mentioned each side flaps is extended out and fixed to an ear that is extended out from side edge of the above-mentioned core in the back area of the diaper.

Application examples

Figures 1-4, show disposable diaper 1 consisting of absorbable core 2, liquid-permeable front sheet 3 covering at least the front surface of the core, liquid-impermeable back sheet 4 covering at least the rear surface of the core, side flaps 6 equipped with elastic part materials 5 on both sides of the core, ears 7 and 8 in the front and back areas, and tape fasteners 9 fixed to the second ear.

A comparatively thin, long sheet is bent in half in the width direction, elastic part materials 5 are fixed to the bent part in the longitudinal direction while the bent part is extended, inner edges 6a facing the elastic part materials are fixed between front sheets 3a positioned in the rear surface of core 2, and back sheet 4, and inner edges 6a facing the elastic part materials are fixed between front sheets 3a positioned at the rear surface of core 2 and ears 7 and 8 positioned at the

inner surface of back sheet 4 in both the front and the back areas of diaper 1, to form side flaps 6.

Front edges 6b in the vertical direction of the side flaps are bent backward over front sheet 3 positioned on both side edges of core 2, again bent backward, and fixed to the front area of diaper 1.

If the elastic part materials 5 are extended, the back edges 6c in the vertical direction of side flaps 6 are extended. It is preferred that back edges 6c are fixed to ear 8 while they are extended out, in order to maintain the extension of back edges 6c.

Side flaps 6 are bent from the front area through the leg areas of diaper 1, as mentioned previously, to form pockets 10 facing each other. Though front edges 6b of side flaps 6 can be bent forward to form pockets 10, the middle parts between front part 6 and back part 6c are twisted. On the other hand, if front edges 6b are bent backward as seen in the figure, the middle parts between front areas 6b and back areas 6c cannot be twisted. So, it is not restricted, but preferred. Front areas 6b may be bent twice and then fixed to ears 7.

A back sheet positioning in the front edge of diaper 1 consists of both water-impermeable sheet 4 covering the entire rear surface of core 2, and reinforcing sheet 11 with a width that is longer than the length, entirely fixed to the outer surface [of water-impermeable sheet 4]. Reinforcing sheet 11 is extended out from the side edges of cores 2, and forms ears 7 in the front area of diaper 1.

The inner side edge 8a of ear 8 in the back area of diaper 1 is fixed between core 2 and back sheet 4, specifically between

the rear surface of side flap 6 positioned at the rear surface of front sheet 3a and the inner surface of back sheet 4.

Tape fasteners 9 are fixed to ear 8.

Figure 5 shows that back edge 6c in the vertical direction of side flap 6 with either a cut or a tack 12 is fixed to ear 8, which extends the adjustment range of the hip size of the diaper.

A mat-like body containing ultra-absorbable polymer particles is used as a main material for fluff pulp and/or fiber webs (especially nonwoven fabric) of core 2, if necessary. The mat-like body with the top surface with which fiber webs (especially webs made with the fibers that are fused at a cross-point) having a high compression elasticity recovery factor (30% or more) under moisture, low concentration, high polarity, and good liquid permeability, are laminated, is used if necessary.

Nonwoven fabric, especially porous nonwoven fabric made by a liquid fiber entangling method is used for front sheet 3 to improve liquid permeability. The pores having a surface area of 7-50 mm^2, an arranged pitch at 6-20 mm, and an overall pore ratio for the overall surface area of 15-70%, are suitable.

A plastic film, especially an air-permeable waterproof plastic film, or a laminated sheet of the plastic sheet with nonwoven fabric, is used for back sheet 4.

Water-repellent nonwoven fabric made with hydrophobic fibers (especially spun-bond nonwoven fabric) or with hydrophilic fibers, and having at least a water-pressure resistance of 200 mm (obtained by a measuring method based on JIS), is suitable for side flap 6 considering leakage prevention.

A material having elasticity in the horizontal direction is used for ear 8 in the back area. A sheet made by laminating nonwoven fabric that is fixed to an area directly brought into contact with the skin with an elastic plastic film is suitable as the elastic material. Examples of the material include a material made by laminating nonwoven fabric made by a liquid fiber entangling method and having a Metsuke of 10-100 g/m^2, with an elastic plastic film having 200 μm or less, by fusion, is suitable. The nonwoven fabric, which is made by needling with liquid, has the maximal extendibility of 500% in either the vertical or the horizontal direction. Considering the extendibility, polyolefin fiber, especially polypropylene fiber is suitable. The various types of conventional elastic plastic can be used. The film exhibiting adhesivity to nonwoven fabric at comparatively low temperatures, such as a heat-shrinkable film made with polybutadiene-polystyrene copolymer used as a base polymer, is used. Examples of type of lamination include the following, i.e., one side of a film is laminated with one side of nonwoven fabric; both surfaces of a film are laminated with nonwoven fabric; a film is discontinuously arranged and laminated with nonwoven fabric; and one side of a film is laminated with one side of nonwoven fabric with a tack. One having the suitable property for obtaining the desirable hysteresis curve (extendibility-elongation stress) may be used.

The following, i.e., plastic films such as polyethylene, polypropylene, polyester, or nylon; dense nonwoven fabric made of the raw material fiber; and sheets made by laminating the raw material fiber with nonwoven fabric, are used for reinforcing sheet 11 forming ear 7 in the front area.

The figure shows that both side edges 3a of front sheet 3 positioned at the rear surface of core 2 and covering the side edges of the core, but it may be extended out.

(3) Effect

In the case of a diaper of the present utility model having the above-mentioned composition, a gathered area made with the elastic part materials of the side flaps from the front area through the leg areas, is bent forward and brought into contact with the leg joints, has a pocket formed with the side flaps from the front side through both leg areas, and another gathered area, made with the elastic part materials of side flaps from the leg area through the back area, is extended out so that it can completely wrap the buttocks area.

Therefore, both the fitting property to the body and leak prevention can be improved by a diaper of the present invention.

Brief description of the figures

The figures represent an application example of a diaper of the present utility model. Figure 1 is an open plan view, Figure 2 is a II-II line cross-sectional view of Figure 1, Figure 3 is a III-III line cross-sectional view of Figure 1, Figure 4 is a IV-IV line cross-sectional view of Figure 1, and Figure 5 is a partial plan view showing a side flap having either a cut or a tack in the back edge in the vertical direction.

1: diaper, 2: core , 3: front sheet; 4: back sheet; 5: elastic part material, 6: side flap; 7: reinforcing sheet, 8, 9: ears, 10: pocket, 11: reinforcing sheet

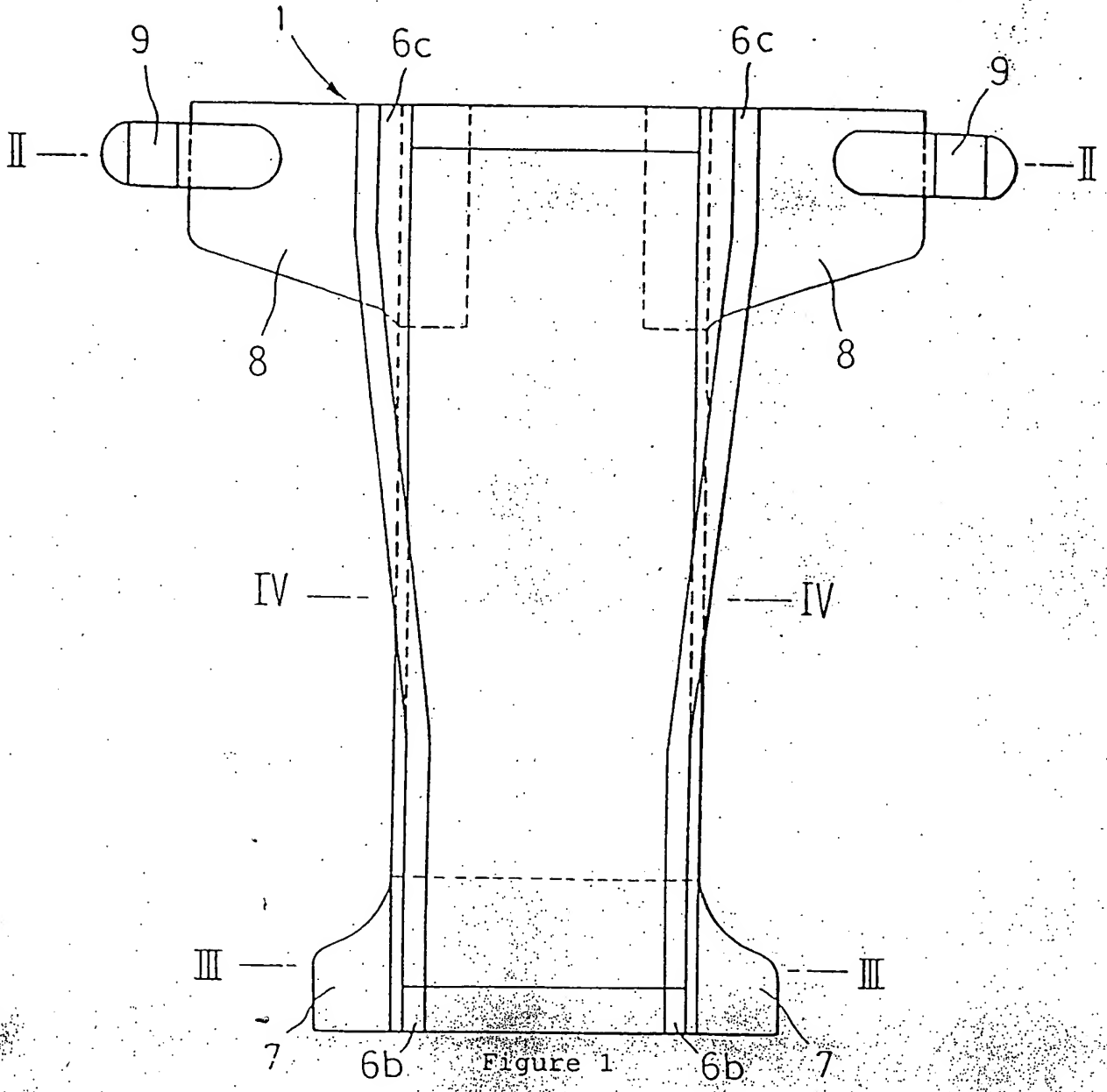

Figure 1

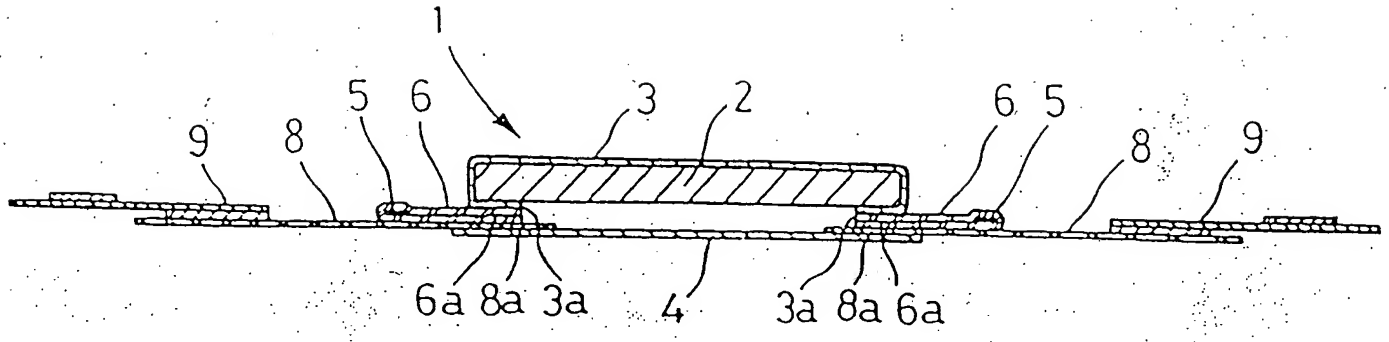

Figure 2

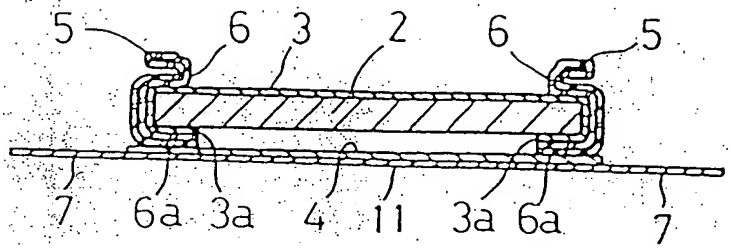

Figure 3

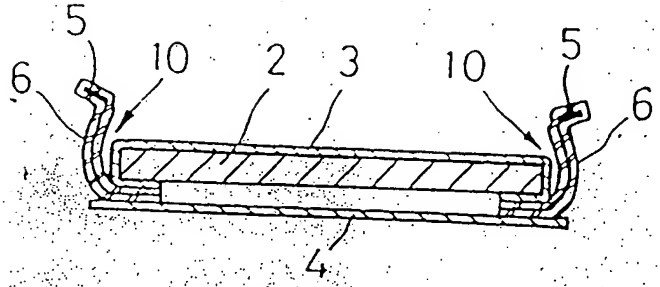

Figure 4

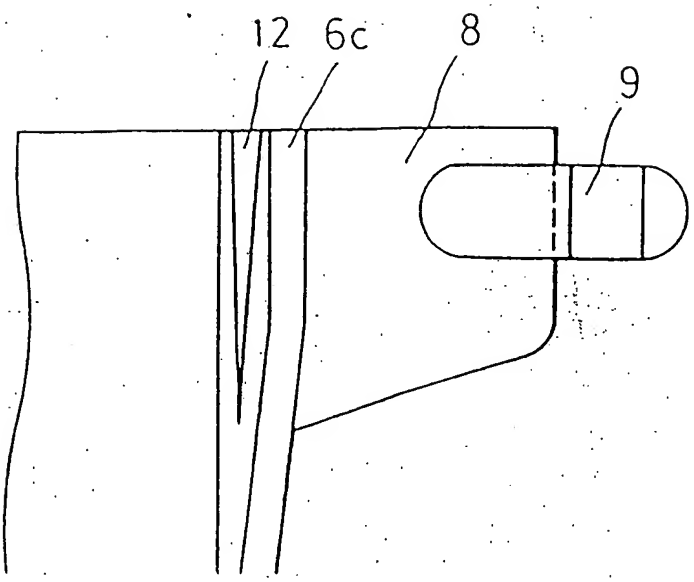

Figure 5

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